

ABSTRACT OF THE DISCLOSURE

A poly(arylene ether) polymer includes polymer repeat units of the following structure:

$$\text{---}(\text{O---Ar}_1\text{---O---Ar}_2\text{---O---})_m\text{---}(\text{---O---Ar}_3\text{---O---Ar}_4\text{---O---})_n\text{---}$$

5 where Ar₁, Ar₂, Ar₃, and Ar₄ are identical or different aryl radicals, m is 0 to 1, n is 1-m, and at least one of the aryl radicals is grafted to at least one unsaturated group that is non-aromatic and is adapted to crosslink at a curing temperature below 200°C without producing volatiles during curing and without providing functional groups after curing. Cured films containing the polymer can have a Tg from 160°C to 180°C, a dielectric constant below 2.7 with frequency independence, and a maximum moisture absorption of less than 0.17 wt%. Accordingly, the 10 polymer is especially useful in interlayer dielectrics and in die-attach adhesives.

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